Proposed Data Use Rules and Data Integration for Baseline Human Health Risk Assessment (BHHRA)

1. Duplicates (Field splits)

A. **BHHRA**: No change from Round 2 Report (R2R) (see 1B)

B. **R2R HHRA:** Field splits are averaged according to the following rules, as specified in the Guidelines for Data Averaging and Treatment of Nondetected Values for the Round 1 Database (Kennedy/Jenks et al. 2004):

- If all results are detected (D), average all D
- If all results are not detected (ND), report the min DL and flag result as ND (U-qualified)
- If results are a mix of D and ND, report the D value

2. Replicates

A. **BHHRA:** Rules are dependent on usage:

For Data Analysis & Reporting - When calculating a mean or a UCL, and when reporting data in general, replicates are included in the dataset as discrete samples, due to the spatial separation of replicate sampling locations (Note: the majority of the replicate samples are within 10 to 20 feet of each other; about 10 percent of the samples are widely separated)

For Spatial Analysis - When generating Thiessen polygons (or any other task which spatially weights data), replicates with unique coordinates are included as separate samples. Data associated with the first sample are used for replicates that have the same coordinates (the second or third replicate is excluded).

B. **R2R HHRA:** Combined according to the following rules:

- If both detects (D), use average
- If 1 Nondetect (ND) and 1 D, use D value
- If both ND use lowest detection limit (DL)

3. Determining the presence of an individual analyte for inclusion in the BHHRA and for the purpose of calculating chemical group sums

A. **BHHRA:** For all media, if an analyte is detected at least once in the study area for a given medium, it is considered present in that medium (for biota, presence/absence is assessed separately for each individual species and tissue type).

B. **R2R HHRA:** For tissue, if an analyte is detected at least once in an exposure area, it is considered present. For all other media, if an analyte is detected at least once in the study area, it is considered present.

4. Summing of Analytes for Chemical Groups

A. BHHRA:

- If at least one group component for a given sample is detected, sum the following:
  a) If an analyte is detected (D), use D value in sum
  b) If an analyte is not detected (ND), but determined to be present (per 3A), use ½ DL in sum

c) If an analyte is ND and determined not to be present (per 3A), use 0 in sum

- If all analytes for a chemical group are ND, report max DL (in the case of TEQs, this is the max toxicity-weighted DL) and flag result as ND (U-qualified)

B. R2R HHRA:

- If at least one group component for a given sample is detected, sum the following:
  a) If an analyte is D, use D value in sum
  b) If an analyte is ND, but determined to be present (per 3B), use ½ DL in sum
  c) If an analyte is ND and determined not to be present (per 3B), use 0 in sum
- If all analytes for a chemical group are ND, report ½ max DL

5. TEFs

A. **BHHRA:** Use 2005 WHO TEFs

B. **R2R HHRA:** Use 1998 WHO TEFs

6. Handling of surface water collected by different methods

A. BHHRA

- Combine XAD-column and XAD-filter in the same way as for the R2R (see 6B)
- Treat XAD and peristaltic samples as separate samples

B. R2R HHRA:

- Combine XAD-column and XAD-filter results as follows:
  - If both D, sum
  - If 1 ND, 1 D, use D value
  - If both ND, use max ND
- Combine XAD and peristaltic samples according to the rules for combining replicates in the R2R HHRA (see 2B)

7. Minimum number of samples for ProUCL

A. **BHHRA:** If less than 5 detected values, use maximum detect instead of 95% UCL for EPC. If between 6 and 10, use 95% UCL and discuss in uncertainty section. If more than 10, use 95% UCL.

B. **R2R HHRA:** If less than 5 detected values, use maximum detect instead of 95% UCL for EPC. If more than 5, use 95% UCL.

Reference:
Kennedy/Jenks Consultants, Integral Consulting, Inc., Windward Environmental, LLC. 2004. Portland Harbor RI/FS Technical Memorandum Guidelines for Data Reporting, Data Averaging, and Treatment of Non-detected Values for the Round I Database. Prepared for The Lower Willamette Group. Kennedy/Jenks Consultants, Portland, OR; Integral Consulting, Inc., Mercer Island, WA; Windward Environmental, LLC, Seattle, WA.